the YUKON TERRITORY LITTORAL

an economic development program

report

by R.D. CURRIE

INDUSTRIAL DIVISION
DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

restricted

THE YUKON TERRITORY LITTORAL

An Economic Development Program

by

R.D. Currie

The opinions expressed in this report are those of the author and not necessarily those of the Department of Northern Affairs & National Resources.

Industrial Division,
Department of Northern
Affairs and National Resources.

RESTRICTED

Ottawa, May, 1964.

Preface

In November and December 1963, the author made a brief investigation of the natural renewable resources of the now uninhabited Yukon coast and Herschel Island in order to assess what role local people from the Mackenzie Delta might play in their exploitation.

The information presented in this report is the result of research of official documents and discussions with many Eskimos who have lived in the coastal areas, R.C.M.P. officers, and other residents who have first-hand knowledge of coastal conditions and resources.

The general recommendations in this report have been formulated after discussions with many Eskimos now living in the Delta, who expressed a genuine interest in the development of permanent and seasonal satellite settlements.

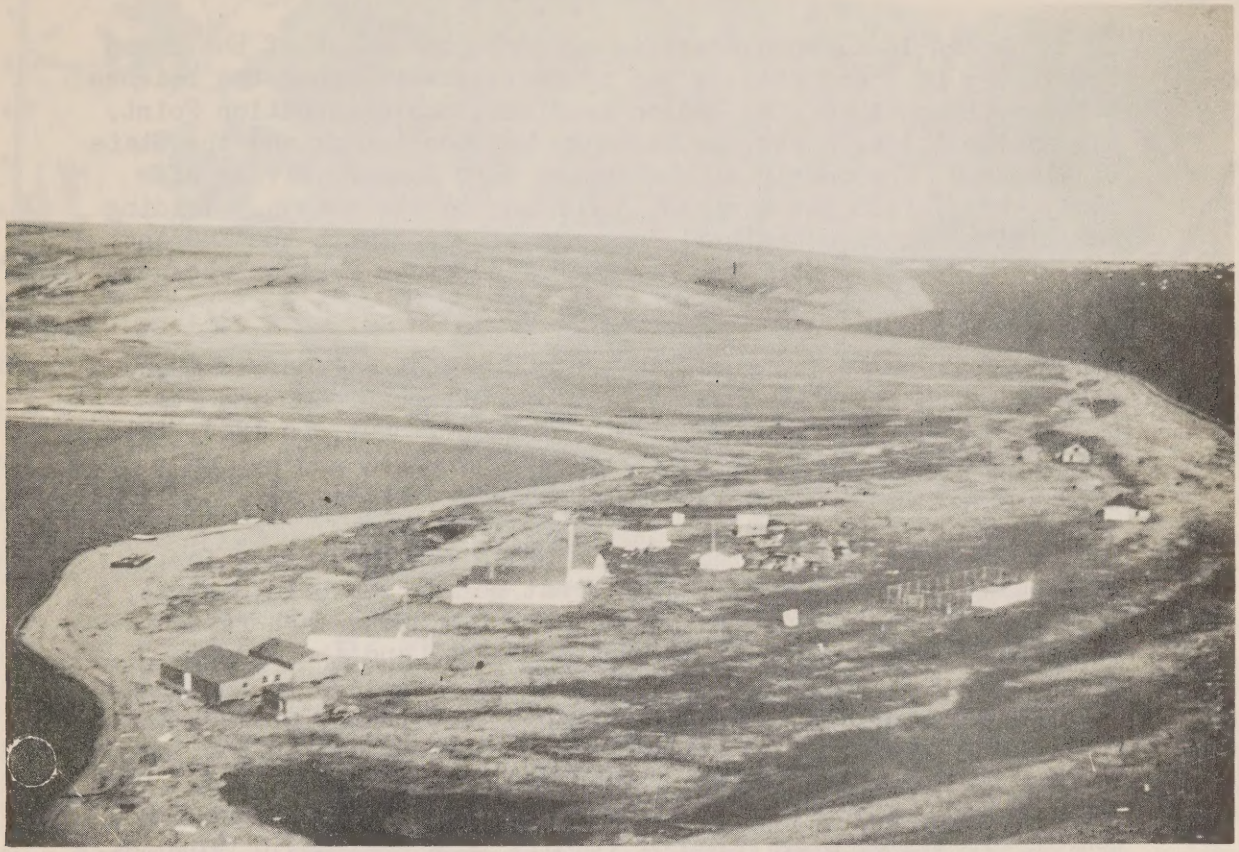
CONTENTS

Acknowledgments

A great deal of the information contained in this report was gleaned from discussions with members of the Department of Northern Affairs at Fort Smith, Inuvik and Aklavik, and special thanks are due to Tom Butters, Regional Administrator, and Don Stewart, Superintendent of Welfare, both of Inuvik.

The author is grateful to Mr. Sam Arey of Aklavik and Mr. Kenneth Peeloolook of Inuvik for the many hours they spent giving accounts of their experience on the Yukon and Mackenzie coasts. To the trappers, traders and scores of Eskimos and Indians who helped, sincere thanks.

Thanks is also extended to Gerry Brochocki, Jon Evans, Max Budgell and Gunther Abrahamson of the Industrial Division who assisted in the material arrangement and editing of this report. The author is grateful to Wally Burton of the Engineering Division for the picture of Pauline Cove today and for other information and assistance. Other pictures of Herschel Island are from the files of the R.C.M.P. and the author extends sincere thanks for their co-operation.



Aerial photograph showing the settlement of Pauline Cove, Herschel Island, as it is today.

Pauline Cove as it looked in the early 1900's.

INTRODUCTION

In 1826, when Franklin explored the coast of the Yukon Territory, he found many Eskimo camps scattered along the beaches between the mouth of the Mackenzie River, and Demarcation Point. (Today the latter marks the boundary between Canada and the State of Alaska.) The people of the region were hunters living off seal, whale, fish and caribou, according to the season. Trading was limited to an occasional exchange of goods with the Indians who claimed the country to the south, and other Eskimos who were their neighbours to the west.

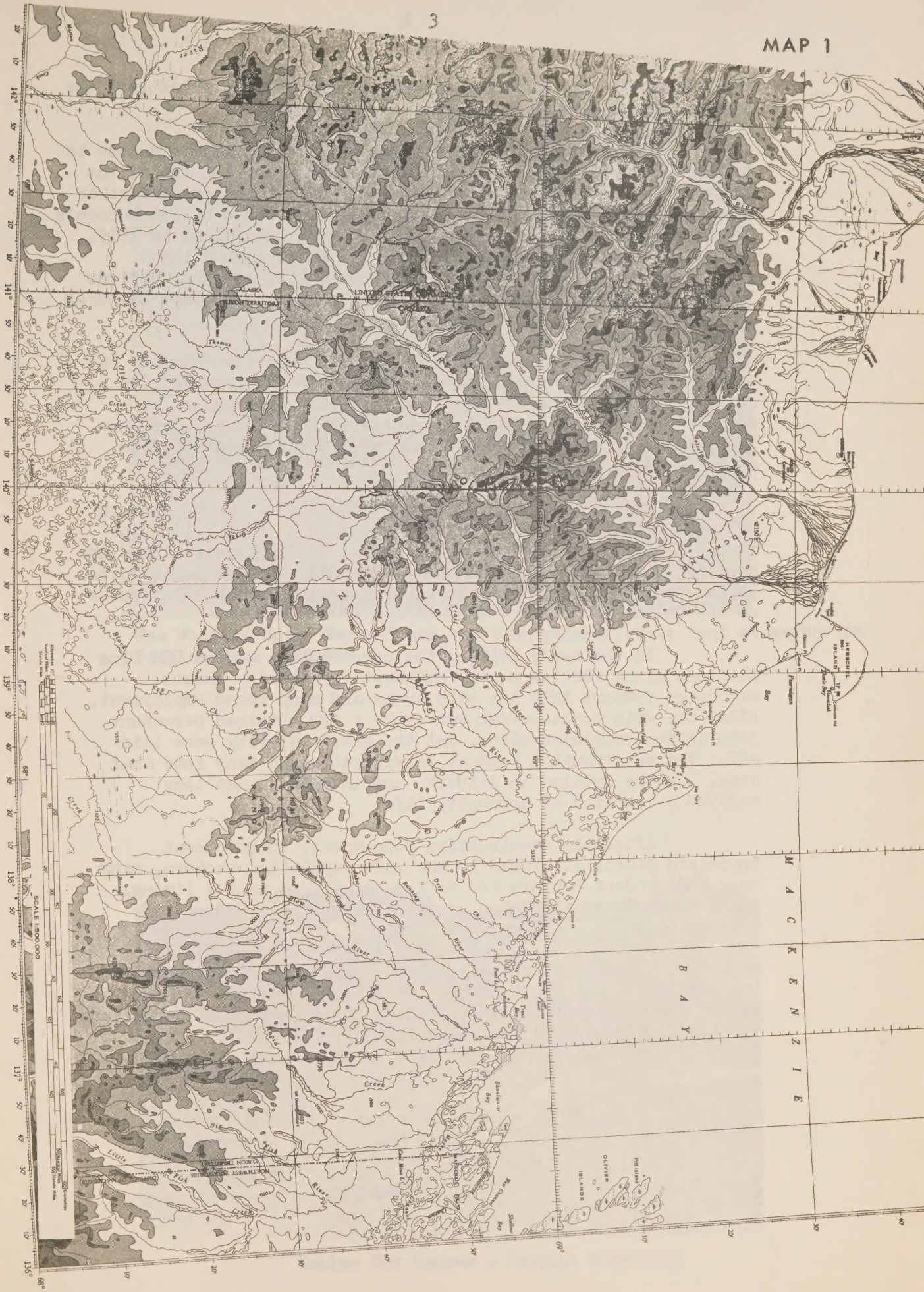
Franklin has recorded that "Herschel Island was much frequented by the Eskimo as it abounded with caribou and its surrounding waters afforded plenty of fish". But, in 1889, the the first of the whalers, the "Grampus", arrived and put an abrupt end to the Eskimo's traditional way of life.

The baleen of the bowhead whale was the reason for her coming. This product was in great demand in world markets, fetching as much as $5.00 a pound. For six weeks each season, bowheads were plentiful in the Beaufort Sea, and the success of the "Grampus" prompted many more ships to come into the area. They fished from six weeks to two months and then wintered at Pauline Cove on Herschel Island. These ships, fast in the ice for as many as eight months of the year, housed 1,500 idle whaling men. During the winter months, the whalers strove to combat boredom by every kind of revelry that they could promote. Eskimos from the whole coast from Barter Island, Alaska, in the west to Cape Bathurst in the east, came to Herschel Island. Many were employed as hunters the year round and supplied the whaling fleet with fresh meat. Men and women alike joined in the uproarious winter life of Herschel Island. The following extract from an R.C.M. Police Quarterly, April 1942, gives an idea of the impact the whalers had on the traditional life of the Eskimos.

> "Of the 2,000 Eskimos who roamed the Arctic coast from Barter Island to Cape Bathurst when the pioneering "Grampus" first pounded her way to Herschel Island, only about 400 remained when the first detachment of the Northwest Mounted Police stepped ashore on August 7, 1903. Liquor, syphilis, measles and other diseases contracted from white men had taken their toll. In the interim, the depleted population had been augmented to some extent by a migration of Alaskan Eskimos."

In the early 1900's, the price of baleen began to drop, and by 1906, it had fallen from $5.00 to 40 cents a pound. By 1910, the great baleen bonanza which had netted the fleet 14 million dollars during the boom years was over and with the exception of two or three whaling captains who converted their

MAP 1


ALASKA
YUKON TERRITORY
UNITED STATES OF AMERICA
CANADA
MACKENZIE BAY
HERSCHEL ISLAND
Pauline Cove
Pauline Point
Phillips Bay
Pelly Bay
Pelly Point
Simpson Pt
Thomas Creek
Old Crow Flats
Trail River
Blow River
Rapid Creek
Shoalwater Bay
Shallow Bay
Pelly Island
OLIVIER ISLANDS
Little Fish Lake
Fish Lake
NORTHWEST TERRITORIES
YUKON TERRITORY
SCALE 1:500,000

ships into floating fur trading posts, The whaling ships left the Beaufort Sea and never returned.

Fortunately for the Eskimo, who by this time had come to depend on manufactured goods, a rising market for the fur of the white fox provided a new economic base. The ex-whalers and other free-lancing traders in the region were soon joined by the Hudson's Bay Company which established a post at Herschel Island in 1915. During the following decade, fur trading posts opened the remaining 'virgin' lands of the western Arctic, and many Eskimos left Herschel Island to trap along the coast towards Cape Bathurst and beyond.

Herschel Island declined further when the Hudson's Bay post at Pauline Cove was closed. The settlement received its death-blow in 1938 when the Company selected Tuktoyaktuk to replace Herschel Island as its transportation centre. The once thriving port decayed, and the bulk of its population drifted away.

As time went on, the price of fox fur dropped from an all time high in the 1920's of $80.00 a skin to an all time low in the 1940's of $3.00 to $4.00 a skin. Trading posts closed in many places, and the Eskimos who had traded at these posts moved inland to be near the muskrat trapping grounds and trading posts of the Delta.

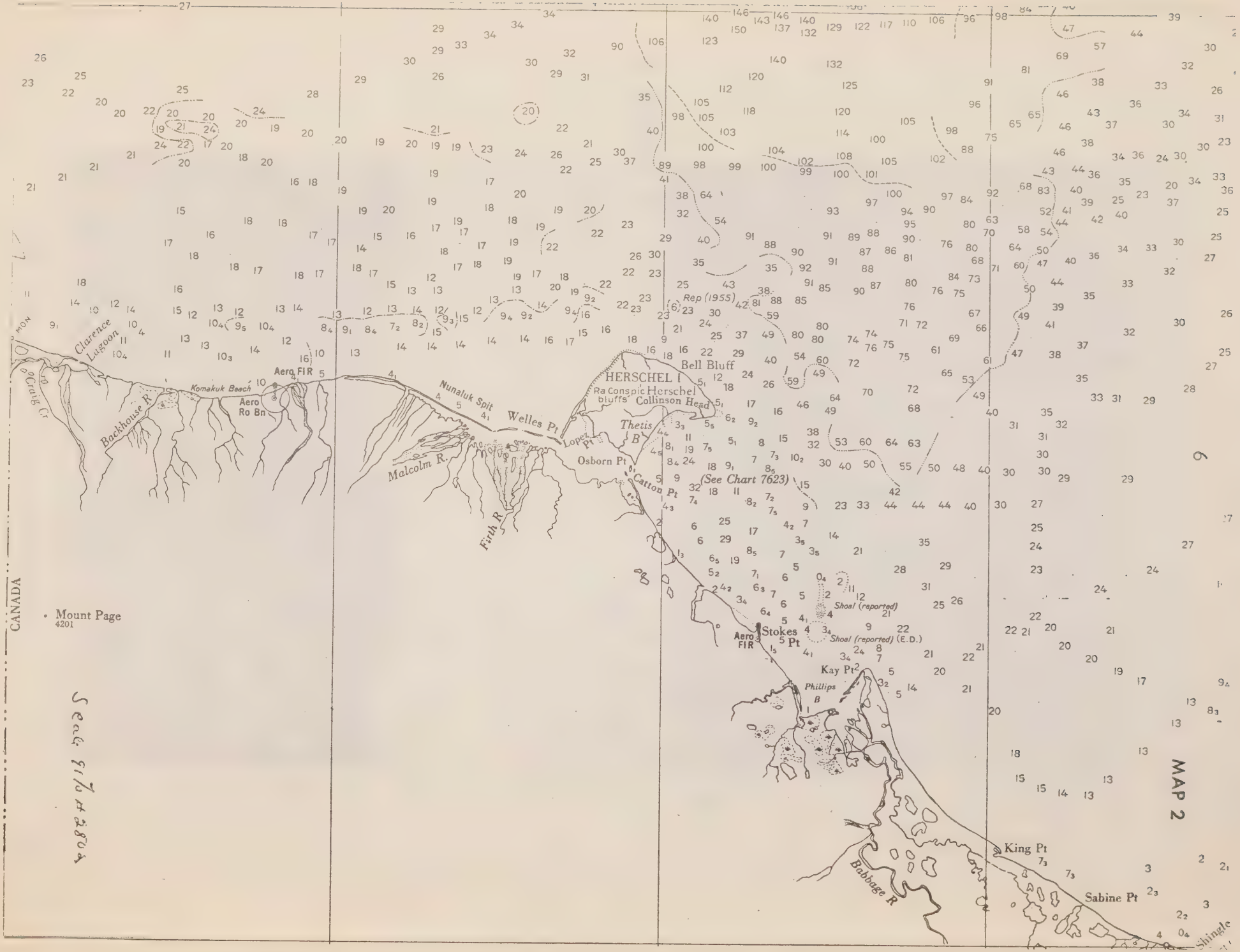
In the early 1950's, the construction of the DEW Line stations along the Yukon and Northwest Territories coasts attracted Eskimos into the site areas and many found employment. After the main construction was over, a few obtained permanent jobs at the completed sites, but the great majority were laid off. The construction boom at Inuvik attracted many into that area. Others settled in Aklavik, and in both places they enjoyed a new kind of community life.

After the construction boom ended, unemployment increased steadily. Today in the main population centers, many once independent hunters are no longer able to make a living. At the same time, the Yukon coast is uninhabited and unexploited.

This report gives a brief geographical description of the mainland coast of the Yukon, general information on Herschel Island and the Yukon coastal area, and sets forth recommendations for the development of two seasonal projects, and for the establishment of a permanent community at Herschel Island.

The Whaling Ship "Herman" and the then popular whale boat at anchor in Pauline Cove - 1916

Eskimo Sod houses - Pauline Cove 1909


Clarence Lagoon
Komakuk Beach
Aero FIR
Aero Ro Bn
Backhouse R.
Nunaluk Spit
Welles Pt
Lopez Pt
Malcolm R.
Firth R.
HERSCHEL I
Ra Conspic bluffs
Herschel
Collinson Head
Bell Bluff
Thetis B
Osborn Pt
Catton Pt
(See Chart 7623)
Rep (1955)
Shoal (reported)
Shoal (reported) (E.D.)
Stokes Pt
Aero FIR
Kay Pt
Phillips B
King Pt
Babbage R.
Sabine Pt
Shingle
Mount Page
4201
CANADA
MAP 2

PART 1 - A

Geographical Description of the Yukon Coast

A coastal plain beginning in the vicinity of Point Barrow, Alaska, extends eastward to the Mackenzie Delta, narrowing to a width of 10 to 20 miles along the coast of the Yukon Territory, where it is backed from west to east by the British Mountains, Buckland Hills, Barn Mountains and Richardson Mountains. (See Map #1) Between Demarcation Point and the Mackenzie Delta, this plain is characterized by stretches of low coastal cliffs, 20 to 40 feet high, and shallow water extends for some distance off shore. (See Map #2) Numerous broad, braided streams meander through this water-logged plain, and at their mouths build up sandspits, lagoons and low alluvial islets which serve to hold and check the ocean which elsewhere is continuously eroding the coast.

Sea-going vessels can sail along the Yukon coast under almost any weather conditions, but the small coastal boats used by local residents are less sea-worthy and must seek shelter at the first sign of a storm.

The best harbours of the Yukon coast are at Whitefish Station, Shingle Point, Kay Point, Phillips Bay, Ptarmigan Bay, Herschel Island, and Clarence Lagoon. (See Map #1)

Navigation Season

The opening of navigation usually proceeds gradually from east to west. The ice in the west channel of the Mackenzie River normally breaks up between May 25 and June 5. Warm Mackenzie River water soon assists break-up at Shingle and Kay Points and this enables boats to work their way westwards. However, in most summers, boats are unable to reach Herschel Island before about July 10. Even after break-up, there is danger of wind and current-borne pack ice reaching the Yukon coast at anytime during the summer. The approximate dates of break-up of harbour ice in Pauline Cove have been recorded by the R.C.M. Police as follows.

1949	4 - 5 July
1950	4 July
1951	7 - 15 July
1952	no record
1953	2 July
1954	10 July
1955	5 - 11 July
1956	7 - 10 July
1957	6 - 10 July

Freeze-up may occur nearly simultaneously along most of the coast with the eastern part freezing last. Normally, this takes place about the third week in September.

Winds

Prevailing winds are from the east and southeast, but those from north and northwest are almost as common. Winds from the other four points are rare except near the coast where the terrain may influence the wind direction. (For example, the almost permanent off shore winds encountered in the vicinity of the mouth of Blow River.) Gales will occur on an average of three to four days a month over the Beaufort Sea.

Climate

July is the warmest month of the year with a mean temperature varying from less than 40°F over the Beaufort Sea to near 50°F on the mainland coast. While frost occurs in July, temperatures lower than 30°F are unusual. Temperatures of 80°F and higher may occur on the coast, but over the water, the variation from the mean is not great. In August, the general features of the temperature are the same as for July except that the values everywhere are about three degrees cooler. During September, the mean temperature begins to fall more rapidly and the mean is near freezing point all over the area. Unusually high temperatures near 60°F may occur in this month, but may also fall to 10°F. In October, the mean temperature is about 17°F. Days with above freezing temperatures become infrequent and below zero temperatures may occur. From December to March, the mean minimum and maximum temperatures are minus 11.7°F and minus 26.1°F respectively. Monthly precipitation over the area is about 1.0 inches in July and decreases to 0.7 inches by October. Precipitation occurs about one day in three. In July, snow falls about two days per month over the Beaufort Sea. By September, the possibility of days with rain and snow are about equal. Rain will fall on an average of one day in October.

The frequency of low clouds over the Beaufort Sea increases rapidly in spring and reaches a maximum in the period of July to October when overcast skies occur on the average 25 days a month.

Along the margin of the Beaufort Sea at Herschel Island, average fog occurence is seven days in July, five in August, two in September, and less than one day in October.[1]

---

[1] The foregoing information has been gathered from the Pilot of Arctic Canada, Volume 3, First Edition, and "Notes on Small Boat Harbors of the Yukon Coast" by J.R. MacKay, Geographical Bulletin No. 15.

Frost cellars Pauline Cove 1909. Meat and fish were frozen and preserved for long period in these simple structures.

Hudson Bay dwelling house 1916.
The house was still standing 1963.

MAP 3


MACKENZIE
BAY
HERSCHEL
I
Pauline Cove
Osborn Pt
Ptarmigan Bay
Wellen Pt.
Firth R.
Malcolm R.
Stokes Pt.
Kay Pt
Phillips B.
King Pt
Sabine Pt
Escape Pt
Escape Reef
Babbage R
Blow R
Shallow Bay
Whitefish Str
Shoal (Reported)
Mackenzie Estuary
West Channel
YUKON
N.W.T.
Clarence Lagoon
Scale in Miles
7
0
7
14
69°
137°
138°
139°
140°

PART 1 - B

General Information on Herschel Island and the Yukon Coast

Herschel Island is located off the center of the Yukon coast. (See Map #3) On the coast, within a radius of 60 miles from the Island, there are several resource rich settlement sites which have been abandoned by the Eskimos. These include Clarence Lagoon, Ptarmigan Bay, Phillips Bay, King Point, and Shingle Point.

The present R.C.M. Police community at Pauline Cove, Herschel Island, consists of two white officers, and Eskimo Special Constable and his family of four. There are three R.C.M. Police warehouses, an R.C.M. Police dwelling house and office combined, one Special Constable's house, one old Hudson's Bay Company house, and three old Eskimo houses in rundown condition. Where the sandspit joins the Island, there are ten old frost cellars. Two of these are being used to store dog and human food. The others are in a state of disrepair. (Picture of Pauline Cove)

Harbour

The protecting sandspit at Pauline Cove makes it one of the better harbours on the Yukon coast. Small ships can anchor there in depths of two and a half fathoms.

The harbour is well sheltered from all winds except from the south and west. No heavy seas or swells build up from this direction owing to the fact that the Island is near the coast and Pauline Cove is on the south or landward side. (See pictures of Pauline Cove and Map #4.)

The south-eastern side of the sandspit which forms the harbour can be made into an all weather airstrip for planes up to the size of a Beachcraft. A winter strip can be maintained with the services of a small bulldozer (D4) on the smooth ice of the harbour, and planes up to the size of a DC-6 could land when the sea ice has frozen to the necessary thickness. The land area around Pauline Cove is level and suitable for any type of buildings.

Communications

The R.C.M. Police detachment at Herschel Island has daily radio communication with the R.C.M. Police headquarters at Inuvik. Thirty miles to the west, on the mainland on the landward side of Beaufort Lagoon stands the operating DEW Line site Bar 1, with radio communication and an all weather airstrip. Twenty miles southeast from Herschel Island on the Yukon coast is the airstrip of the abandoned Bar B site. Approximately 50 miles further southeast is the operating DEW Line site Bar 2. (See Map #2)

RENEWABLE RESOURCES

Seals - Ringed seals constitute the most important resource of Herschel Island. They are plentiful around the Island all through the open water season, and are found in open leads during the winter. Hunting on the winter ice is hazardous as strong gales often sweep down from the mountains, break the ice from the land, and drive it out to sea.

The ringed seals migrate back and forth from the Alaskan coast to Banks Island and beyond, being most plentiful around Herschel Island between late July and September. With strong west winds several hundred seals have been seen at one time in Thetis Bay and Pauline Cove.[1] When easterly winds prevail, the silt-laden water from the Mackenzie Delta, bearing quantities of driftwood, is driven into the Herschel Island area. The muddy water drives the seals away from the Island and driftwood fouls up the nets. Fishing is discontinued when strong easterly winds prevail.[2]

Seal nets used during August and September yield the main seasonal harvest, but a large number of seals can also be shot during this period. During the winter, hunts can be carried out in the open leads. In the spring, prior to break-up, there is good hunting between Herschel Island and the coast when the seals bask on the ice. Short seal nets from four to eight feet long were used in the past to take seals in cracks in the sea ice. The old hunters state that, with these various methods, sealing can be carried on the year round. It is the opinion of the R.C.M. Police and Eskimos that this resource has never been fully exploited.

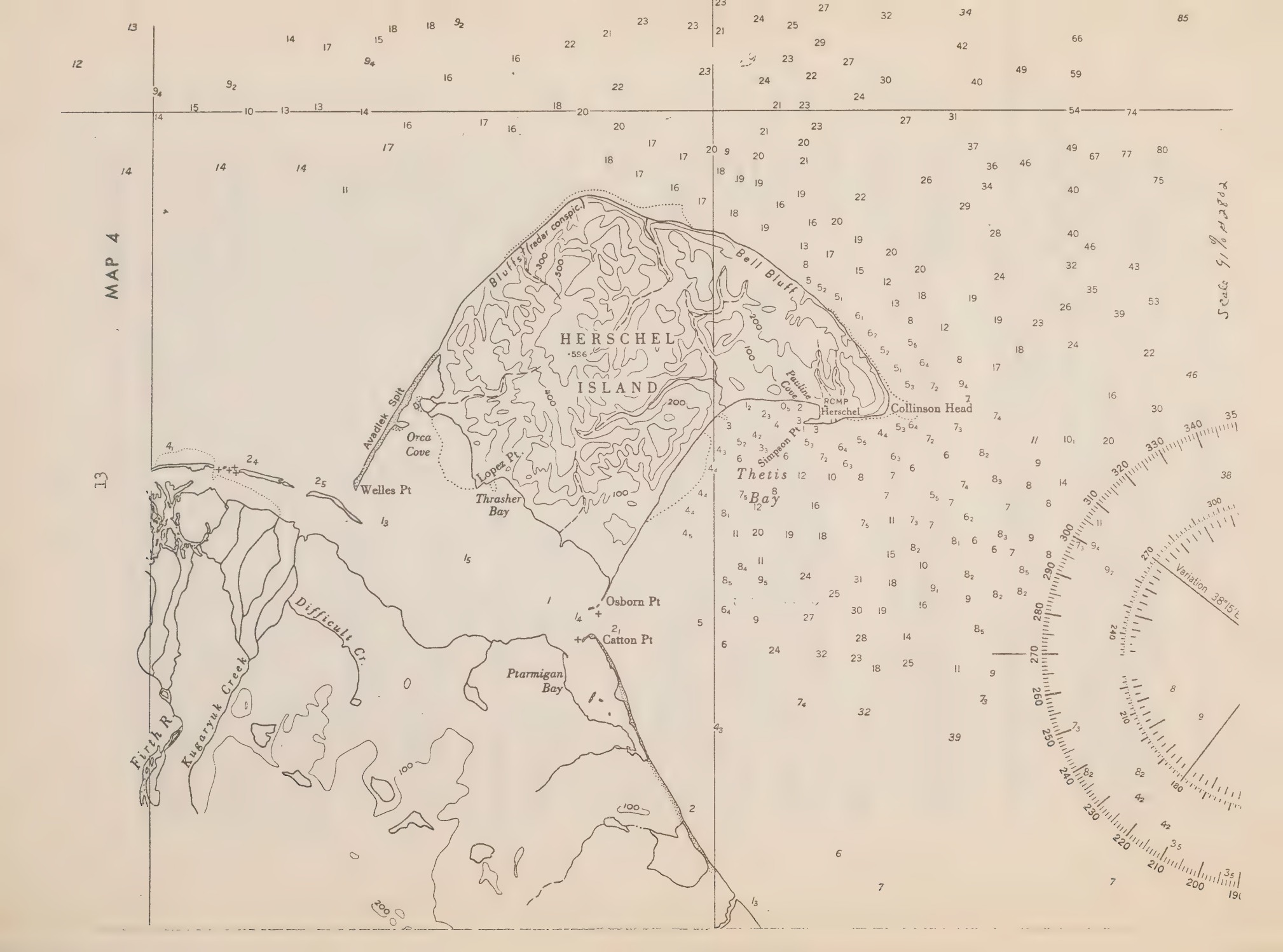
In a "poor ice year", on shore winds may push drift ice into the coast during the open water season making the use of nets and boat movement extremely difficult and thereby cutting down production. During the summer, killer whales occasionally put in an appearance, and as long as they remain in the vicinity, the seals seek safer waters.

With good fishing boats and nets and a determined effort, from 600 to 2,000 seals could probably be harvested annually at Herschel Island.[3]

---

1) 2) R.C.M.Police officers - Herschel Island - personal communication

3 R.C.M.Police officers at Herschel Island - personal communication. F.R.B.'s Gerry Hunter indicated that the migratory seal herd could sustain an annual yield of 2,000.


MAP 4
13
HERSCHEL ISLAND
·586
Bluffs (radar conspic.)
Bell Bluff
Pauline Cove
RCMP Herschel
Collinson Head
Simpson Pt
Thetis Bay
Avadlek Spit
Orca Cove
Lopez Pt.
Thrasher Bay
Welles Pt
Osborn Pt
Catton Pt
Ptarmigan Bay
Difficult Cr.
Kugaryuk Creek
Firth R.
Variation 38°15'E

Square Flippers or Bearded Seals

These are found along the Yukon coast and as far east as Liverpool Bay. Although not as numerous as ringed seals, they are plentiful enough to make a valuable contribution to the economy.

White Whales

Large numbers of white whales move east from Point Barrow after break-up. They feed along the coast and many enter the Blow River in July and lie in the shallows for several days. In 1960 and 1961, a fishing project was undertaken by the Welfare Division of NA & NR at Inuvik, and several families from Inuvik and Aklavik spent the summer at Shingle Point. In 1960, the people fishing at Shingle Point took 17 whales, and in 1961, they took 20 whales.[1] The whales go west past Herschel Island in August and September and are most numerous in the vicinity of Pauline Cove during this period.

Aircraft pilots report seeing large numbers of whales from Herschel Island to Cape Parry. F.R.B. officials have indicated that potential catch can be in the vicinity of 500 whales each year in that area. At present, the yearly average is far below this number.[2]

Arctic Char

Char are found along the coast from Clarence Lagoon to Shingle Point with the main concentration around Herschel Island and Ptarmigan Bay. They arrive at Herschel Island in early July and remain in the vicinity until late August. The people who have fished the coast say that after break-up the char come from the Malcom, Firth, and other rivers to the west and from the rivers eastward as far as the Mackenzie. In 1963, the R.C.M. Police, using 10 nets inside Pauline Cove, took 5,000 char in ten days.[3] Large spring and fall runs of char are reported at Ptarmigan Bay.

Herring

During the summer, blue and cisco herring are found in about equal quantities along the coast from Herschel Island to Blow River.

The blue herring are most plentiful in August and September, the ciscos are most plentiful in July.

---

1 E. Hofmann - Industrial Division - NA & NR - Mr. Hofmann stated that these whales were taken with very little effort. Many were sighted, but lack of experienced men and equipment limited the hunt.

2 G. Abrahamson - Area Economic Survey - Tuktoyaktuk - Cape Parry. Page 88

3 R.C.M. Police officers - Herschel Island - Personal communication.

In 1960, the people with the NA & NR Welfare project at Shingle Point took 18,000 pounds in a few days with sweep nets. In 1961, they took 12,000 lbs.

Both years, all the fish were taken in the lagoon inside the sandspit[1] While small numbers of herring "bleed" into the lagoons, it is likely that far better fishing and a more sustained yield would result from fishing along the open coast.

Other Fish

Inconnu, whitefish and trout are found along the Yukon coast and at Herschel Island.

Bowhead Whales

The bowhead whale population is increasing. Pods of 30 were seen in the Beaufort Sea and Mackenzie Bay in 1963.[2] Numerous single whales were sighted from boats sailing in the area.

Caribou

There is a paucity of scientific information on the caribou of the northern Yukon Territory. In 1953, Munro[3] estimated that 25,000 to 30,000 animals ranged on the Porcupine Plateau in Alaska and Yukon. Indians in the area maintain that some years as many as 100,000 caribou move through the country. According to Munro, the herd winters on the Porcupine Plateau, moves towards the Arctic coast from mid-March until the latter part of April, spends the summer on the coast and along the foothills of the British Mountains, returning southward in July.

Caribou represent one of the area's richest resources. Conservation agencies agree that the northern Yukon herds would not be harmed by increased exploitation.

Polar Bears

Some polar bears are found on the sea ice around Herschel Island when open leads occur during the winter. In the past, individual hunters living on the coast have taken up to five bears during the winter season.[4]

---

1 Eric Hofmann, Food Specialist, Industrial Division, personal communication

2 T. Nicholl, Projects Officer - personal communication.

3 D.A. Munro, Preliminary Report on the Caribou of the Northern Yukon Territory. 1953.

4 Sam Arey and other Eskimo hunters of Aklavik - personal communication.

White Foxes

White foxes are found along the coastal plateau, on the sea ice off the Yukon coast, and all around Herschel Island. In the past, the quality of the fox fur taken in this area was considered second only to the foxes of Banks Island. (Banks Island foxes have always fetched the highest prices in the western Arctic because the fur is not damaged by contact with brush which is absent from the barren terrain.) The foxes migrate over the sea ice from Banks Island to the Yukon coast, some following the polar bear routes and living off the remains of seals left by the bears.[1]

Barren Ground Grizzly Bear

These are fairly plentiful along the Yukon coast in summer. Although they are protected, various people reported hunters take several annually. (Since November 1963, holders of a General Hunting Licence have been permitted to take Barren Ground Grizzly Bears)

Berries and Plants

A wide variety of berries and edible plants grow in profusion along the coastal plateau from Shingle Point to the Alaskan border. Although the climate varies and with it the yearly crops, these resources are important potential items of food for local consumption and export.

Other Resources

King crab have been picked up from the beaches around Herschel Island.[2] (It is reported that V. Stefansson, the explorer, used to catch them through the sea ice by tying a chunk of seal meat to a line and letting it sink to the bottom. The crabs would be pulled up clinging to the meat.

Large flocks of geese stop to feed on the mainland coast and on Herschel Island during the fall on their southern migration. Ptarmigan are fairly plentiful and increase in numbers farther back in the mountain area. Moose seem to be moving out to the coastal plateau in greater numbers with each year. In recent years, hunters have taken up to five moose incidental to their caribou hunting and fishing.

The numerous wild flowers (over 200 specimens) which bloom on Herschel constitute a potential source of income through "live" export to the south.

Driftwood is found in large quantities all along the coast. Besides being the main source of fuel, good logs can be collected for sawing into rough lumber.

Local coal and other mineral deposits may, in time, become sources of fuel and income.

---

1 & 2 Sam Arey and other Eskimo hunters of Aklavik - personal communication.

PART II

The Development of Herschel Island

The population of the Mackenzie Delta is concentrated for the most part in the communities of Tuktoyaktuk, Inuvik and Aklavik. The employment possibilities in these communities are limited, and many people are unable to find wage work, or make a living off the land.

Many mature and able Eskimos are anxious to find a way of breaking out of this futile pattern of living into which they have fallen.

Herschel Island, lying off the center of the resource rich Yukon coast, is an excellent location for a new settlement which could give a fresh start to at least ten families.

As industries are developed, harvesting and processing techniques improved, and marketing expanded, more people will be able to live productively in the area, with Herschel Island as the anchor settlement from which the whole Yukon coast can be harvested.

The economy of the new community can be based on ringed and bearded seals. The author estimates that, with proper gear, efficient organization, and an energetic harvesting program, up to 2,000 seals can be taken annually.[1] The sale of sealskins will supply the main cash income, and seal meat will yield important food. The herds of caribou which graze the Yukon coast will provide meat, hides and other valuable by-products, and can contribute significantly to the community economy. The development of a small commercial char fishery (Gerry Hunter - F.R.B., estimates 2,000 lbs. as a start) and the harvesting and processing of other species of inshore and off shore fish, can supply additional food and income. The harvesting of beluga and bowhead whales will give an opportunity for development of specialty food products for export, and provide materials for handicrafts production. White fox trapping can be a profitable seasonal activity. The berries and wild vegetable resources of the coast can be harvested and processed for local use and for export. Other supporting industries can be developed as the now unused resources are put to use. Arts, crafts and tourism are potentially important sources of income, and should have high priority in the program for the development.

---

[1] Gerry Hunter of F.R.B. suggests that the numbers of seals passing Herschel Island could support this annual harvest.

The development of Herschel Island can be undertaken over a period of three years. The first two years a seasonal project could be carried out by ten families. During this period, the full potential of the area should be known. If conditions are satisfactory, the construction of permanent settlement could be done the third year on a crash program basis.

Advisory Council

When the author visited Inuvik and Aklavik in November and December of 1963, many meetings were held with the people to study the feasibility of a satellite settlement program. Committees were set up in Aklavik and Inuvik under the chairmanship of Mr. Sam Arey and Mr. Kenneth Peeloolook respectively. These committees talked with the people about the program and can assist in the Herschel Island Development. For example, the committees can explain this report to the people and contribute suggestions and ideas for the improvement of the development program. (As no committee was formed at Tuktoyaktuk, this should be done so that anyone interested may also be part of the plan.)

The committees can form a central group to be known as "Herschel Island Development Council". This Council could include the elected Eskimo representatives, all members of the NA & NR involved in the development, and the Regional Administrator who should be either the chairman of the Council or official adviser to the Council. This Council can function during the organization period and later assist the new community to become an integrated part of the social, economic and political life of the region and the district.

Projects Officer

The next step would be the appointment of a Projects Officer who would be in charge of the first season's operation. He should be thoroughly familiar with the correct handling of sealskins and all other resources of the area.

The Projects Officer should discuss all phases of development with the Council and the people interested in going to Herschel Island.

In this way, he will gain their confidence and bring them in on the planning of the project. By the time it is ready to go, the people will be deeply involved and agreed on a program of action. This will make for a good start and set the pace for a successful season's operation.

Settlers

The third step would be the careful selection of at least 10 families for the seasonal project.

Complete information should be made available through the Council to all the people concerned, and interested parties should make application to the Council for the chance to

participate in the first sessional project. It should be borne in mind that the older Eskimos know the northern Yukon Territory well, and it would be desirable to have a fair balance of young and older men. The older men will give important leadership in a way of life and in an area with which they are familiar. They will solve or avoid problems unknown to young men brought up on the quiet waters of the Mackenzie Delta.

While it may be desirable for the people who engage in the seasonal projects to return as permanent settlers the following year, this may not be so in all cases. The people should pay rent for all equipment used. If at any time a man wants to leave the project, he can be replaced by another who may wish to become a permanent settler without upsetting the overall plan of repayment.

Supplies

In order to produce the maximum yield from this seasonal project, the people must have efficient gear and adequate supplies. A survey should be made of the equipment owned by the people chosen for the seasonal project. They should be encouraged to provide as much as possible themselves, but the Department should see to it that they are equipped to make a maximum harvesting effort. Some of this gear would be used by groups, other items by individuals, but in any case, rental should be charged for the use of all equipment. The most obvious needs can be roughly catalogued as follows: personal equipment and supplies, boats, nets and moorings, temporary sheds, processing equipment and supplies, bowhead whaling equipment, ice houses and other miscellaneous equipment.

Personal Equipment

Herschel Island is located on a rough, windy part of the coast. Heavy overcasts are common from July to October. Men will be working in icy water under harsh conditions. The people will live in tents the first two years, and these should be large, well heated and comfortably furnished. Substantial supplies and nourishing foods must be on hand so that the people will be in condition to stand the rigors of the climate, and be able to stand up to the effort they must make during the peak weeks of seal harvesting. Much food will be taken from the land and the sea, but the Delta people have lived on a varied diet for a long time and the kinds of store food they like must be available for them to purchase.

There will be many foggy, rainy days with high winds when hauling nets and wrestling seals to land will be a tough, miserable job, and warm clothing, gloves, thigh rubbers, etc. will be essential. The importance of good working clothes cannot be over-emphasized, and although every man should supply as much of his own as he can, he should be advanced working clothes

necessary to fill any gap which exists between what he can supply, and what is necessary for him to make a maximum productive effort.

Boats

The service of a stout boat will be required for the first two years' projects. This boat should be 40 to 50 feet long with a powerful engine and auxiliary sails. The author suggests that the Departmental schooner "Nanuk" would be suitable, and that she should be reserved for the Herschel Island project.

Although much of the seal, char, herring and whale fishery can be carried on in sheltered waters by freighter canoes, at various points around the island, such as Avadlek Spit, (see map no. 2), a larger type of boat will be necessary. At least two skiffs of the Franzin type will be needed. (These skiffs are approximately 26 feet long, powered with a 9 1/2 h.p. inboard motor and would be satisfactory for outside work.)

Five freighter canoes will be needed to tend nets in the Thetis Bay area, and in other parts of the Island and the coast. These should be fitted with 18 h.p. outboard motors as high winds are frequent, the shallow waters extremely rough, and the speed of canoes will be important when sudden gales make it necessary to reach a safe harbour in a hurry.

Nets

Twenty seal nets will be required, ten for the Pauline Cove location and ten for test fishing suitable locations at other points of the island such as Avadlek Spit.

Pauline Cove in Thetis Bay is believed to be suitable for setting a seal trap of the type used at Port Burwell[1]. A trap should be provided for the first season's operation. Time may not permit the experimental use of this equipment, if the take from conventional nets, shooting, etc., is producing a maximum yield, but experimental trap fishing should be carried out under an experienced supervisor as soon as possible.

---

[1] A study was made of a map of Pauline Cove, showing depths and the pattern of seals moving in and out of the Cove. Ray Buffitt -- Industrial Division's expert on seal traps -- is of the opinion that a trap could be successfully used at Pauline Cove.

Twenty char nets will be required, 10 to be used in the Pauline Cove area, and 10 at other island and coastal locations. Gerry Hunter of the F.R.B. suggests a commercial fishery quota of 2,000 pounds.

Twenty herring nets should be provided. In addition, a herring seine should be supplied as at times great schools of herring may come to Thetis Bay, and seining can, under certain conditions, be much more effective than other netting.

Observers estimate that 50 tons of caplin have been seen during the summer season in the Herschel Island area.[1]

Although no extensive tests have been made on the potential harvest, these fish can constitute an important dog food item. (In Newfoundland, thousands of tons are seined each year when the caplin swim near the beaches to spawn. The fish are taken with a seine from 600 to 1,000 feet long. The seine is "shot" from the shore to surround "beds" of caplin, and then pulled back to the shore, where the caplin are gathered into a "pocket" of the seine and "dip-netted" into the boats. The fish are then spread out on the beaches and sun-dried for dog food. They are also lightly salted, dried, and sometimes smoked for human food.)

A small seine suitable for caplin should be provided, and this might also be used in connection with the herring fishery. Knowledgeable Eskimos maintain that whales are present in the area during the entire summer, and ten whale nets should be provided for use outside the sandspit at Pauline Cove, and at other locations.

Buildings

Processing sheds should be of a temporary nature for the first two seasons and consist of white canvas tents thrown over two by four frames with four-foot plywood walls. At least five processing tents will be required to efficiently house the various fishing, whaling, and other operations. Temporary sheds should be conveniently located and the interior layout should be such that handling of the products can be done rapidly and result in top quality and maximum utilization. An important item to be considered in locating the sheds should be the availability of fresh and salt water, so that the building and equipment can be kept spotlessly clean after each work period. A drying shed and smokehouse should also be constructed.

---

[1] Gerry Hunter - Fisheries Research Board - personal communication.

Frost Cellars

There are, at present, at least ten old frost cellars in Pauline Cove, only two of which are being used by the R.C.M. Police. The other eight need extensive repairs as they have not been used for many years. Timber should be provided for the reconstruction of some of these frost cellars and they should, if possible, be put into operating condition for use during the seasonal projects.

Cannery

A small canning plant should be provided and char and other species of fish, whale, wild fruits, game, etc., and all edible plants should be canned for local use and export. The construction of the cannery must conform to Department of Agriculture's regulations.

Work Program

A program designed to get maximum production should be drawn up by the Projects Officer and the settlers, and should be followed through on schedule.

All boats, motors and nets and other equipment should be in tip-top operating condition at the start of the season, and the people should be encouraged to make immediate repairs and keep all equipment in a high state of efficiency.

Besides giving productive work, the seasonal projects will provide important data on the problems and potential of the area. The people will get the feeling of the place, and be in a position to make up their minds whether they want to settle there permanently. The type of people who are best suited to become permanent settlers will be easily recognized, as will people who are not happy there and do not pull their weight. The sea, weather, and ice conditions experienced will shed light on many aspects of the work, and will give the people an idea of the type of boats best suited for various jobs and their power requirements. The most productive fishing areas will be found, and peak harvesting dates will be known. The best seal netting locations will be picked out and, if time and conditions permit, the efficiency of the seal trap will be recorded. Co-operative education should be carried on during the seasonal projects in preparation for the organization of the consumer and producer co-operative society at a later date.

Estimated Cost

The cost of the first year's project would be somewhere between $30,000 and $40,000. This amount would cover the purchase of basic supplies and equipment. (See Appendix 1 for breakdown of cost.)

Estimated Yield

A target should be set for each resource and the following figures should be well within reach of the project.

Resources	Target	Yield	Weight and Volume
Seals	1,000	Human food meat - liver	19,000 lbs.
		human & dog food - blubber	22,000 lbs.
		dog food bones and other parts	24,000 lbs.
Belugas	20	Oil	450 gallons
		Meat & flippers	3,000 lbs.
		other edible	4,000 lbs.
		dog food - liver meat bone etc.	16,000 lbs.
Char	2,000 lbs.	2,000	2,000 lbs.
Herring	20,000 lbs.	20,000 lbs. salted in barrels	20,000 lbs.
Whitefish	5,000 lbs.		5,000 lbs.
Inconnu	5,000 lbs.		5,000 lbs.
Bowhead whale	1	30 to 50 tons dog food oil and human food	60,000 lbs.
Caribou	300	meat	33,000
		by-products	3,600
Berries	100 gals.		100 gals.
Mushrooms and other edible plants	Quantities unknown		

A program for community improvement should be drawn up and the men could work on these improvements in their slack time. It is suggested that funds be set aside to pay the people for all work of this nature during the first year.

The combined income from the sale of 900 sealskins and from the wages earned on community improvements should yield the 10 families involved a gross income for the season of $20,000 to $25,000.

Working Policy

An overall policy must guide the project, but the problems and details of the operation should be discussed at all times with the Herschel Island Development Council. They, in turn, should explain these matters to the individuals interested in the project and seek their ideas and aspirations. Such open discussions are of the utmost importance. In this manner, the people will prepare and adopt rules for the conduct of the seasonal project and the affairs of their settlement. Everytime such an approach is used, the people will learn a lesson in community management, and move nearer to the day when they will take over the running of the affairs of their community.

The author suggests that control of the seasonal projects be vested in one authority, and that the responsibility for this type of operation could be best undertaken by the Industrial Division.

The estimated cost of the first two seasonal operations might be borne by the Department, but most of this amount could be considered as recoverable.

The people engaging in the projects should understand clearly that it must be as nearly as possible self-sustaining from the beginning.

They would understand that all supplies issued to them must be paid for and rent must be paid for all equipment sufficient to cover the deterioration costs attendant on its seasonal use.

These payments would be assured if the Projects Officer could buy the sealskins from the people, paying a price as near as possible to that obtainable on the southern market. (The margin of profit should be sufficient to cover the cost of getting the skins to the southern markets.)

The division of the total amount among all the people could be made on a basis consistent with each man's contributing skill and effort. But before any invidivual received his share, the entire amount he owed should be deducted,and then there would be no problems of payment after the project was finished.

Produce Transportation

A system of communication should be devised where all fish and meat produce above the needs of the seasonal community would be taken to Aklavik and/or Inuvik and stored for later consumption, sale or processing.

The Permanent Settlement

If the seasonal projects prove successful, the construction of the permanent settlement of Herschel Island should be carried out as a crash program in the third year.

The swift completion of buildings necessary to the community's industrial and social needs will permit the people to begin to pay off the recoverable costs involved at an early date. The policy of resettlement worked out of Herschel Island development can be extended to other Eskimo people in other areas of the North.

Community Planning

In an unplanned community thousands of man hours a year are wasted in useless effort. A well planned and efficiently laid out community results in the saving of thousands of man hours of work a year. Consideration should be given to the possibility of sending a member of the Engineering Division, and a team of community planning specialists into Herschel Island during the seasonal projects. These men could study traffic patterns, site planning, industrial layouts and building locations, etc., and they should discuss all phases of their plans with the people and invite suggestions and ideas. Then they should bring all the ideas together into an efficient master plan for the development of the community. Perhaps a private firm of consulting engineering could be hired to do the study.

The cost of the construction of the settlement cannot be accurately forecast until this plan is completed. However, there are certain minimum requirements for the community growth. These fall into two categories -- the recoverable and non-recoverable costs.

Housing

Ten houses should be built with a maximum speed. The type of housing should be chosen by the people and should reflect in their size, comfort and conveniences the faith the Department and the people have in the future success of the community. The

designers of the community should use imagination and try to style the houses and lay out the community so that it will fit into the Herschel Island landscape. If these things are taken into consideration, the community will be an example of charm, comfort, and efficiency.

Industrial Complex

The five buildings of the Bar 2 site on the Yukon coast are now in the hands of NA & NR. These buildings might be moved to Herschel Island to provide most of the material for an industrial complex. This complex would have to have space for the following operations -- cannery, seal cleaning sheds, seal meat processing sheds, sealskin stretching sheds, drying sheds, dog food shed, bowhead and beluga shed, sharp freezer, and other miscellaneous operations. This complex would also include a store and warehouse and a handicrafts workshop. The buildings should be designed so that expansion can be carried out with minimum expenditure. On the other hand, the Butler type buildings may more efficiently answer the needs of the project. They are 32 feet wide and come in multiples of 12 feet and can be expanded as necessary.

Frost Storage

Herschel Island is well situated for the development plans and the construction of a big underground frost storage. (The Research Institute at Inuvik may be interested in this project.)

The main reason for needing big storage facilities is that, up to 2,000 seals may be taken in a six week period. This represents over 25 tons of meat, approximately 25 tons of fat, and an equal amount of by-products which can be gound and preserved for dog food.

The old Eskimo hunters of Aklavik and Inuvik have proposed that two Eskimos be brought from Alaska to teach the young men how to harpoon and butcher the bowhead whale.[1] The revival of this hunt will mean that, from thirty to fifty tons of human and dog food will be hauled ashore in the carcass of each whale, and this must be processed quickly. Surplus stocks of caribou, fish and other perishable food can be stored. Berries are plentiful on the mainland coast and will, in time, be processed or frozen to become valuable items of the people's diet, and for export to southern markets. The need for efficient frost storage on Herschel Island justifies exploratory work on this problem.

---

[1] The hunters at Barter Island and Point Barrow take up to five whales a season.

It might be well to choose a hill side site rather than the present location of earth covered frost cellars on Herschel Island. The face might be selected and a cavern blasted in the hillside following a plan which will permit progressive enlargement of the storage if the need arises. When the storage has been completed, a 20,000 pound capacity freezing unit might be erected at the entrance to the tunnel leading to the storage. A food preparing shed could be erected in front and joined to the freezing unit. The flash freezing of the fish and meat will ensure that its introduction to the inside holding chambers will not raise the temperatures, and the products inside will be uniformly and permanently frozen. Separate chambers for dog and human food and others for various different products such as seal meat and fish may be necessary to keep the individual flavours from spreading to other products. Adequate ice storage will permit holding food the year round, and marketable products can be air shipped during the winter months, with air craft up to the size of DC 6 using strips cleared on the land fast ice of Thetis Bay.

Bath House

As in other communities, a public bath house, laundry, and toilet should be built centrally in the housing area. The importance of the bath house will be all out of proportion to its initial cost. It will pay big dividends in the cleanliness, health, and happiness of the community.

School

The establishment of a school at Herschel Island is one of the most important parts of the development. Without intending any criticism of the present hostel system which is working so well in the North, it is suggested that this system will not be suitable for the children of a satellite community such as is proposed for Herschel Island. The movement of people from comparatively modern towns to the coastal environment must be given serious consideration especially from the point of view of what will happen in the future. It is certain the people will not be happy without their children. The life of the new settlement can be rewarding to people who learn how to make the most out of their opportunities and resources. The skills of hunting, fishing, and processing must be learned on the spot. Youngsters must be taught how to relate the things they are learning in school to the everyday work of the community in which they live. If they grow up and learn early to manage the community and the coastal resources within its orbit, they will make a great contribution to the area in which they live - economically, socially and finally politically. Higher education can be carried on at the larger centers and many children will go through the local school and on to the hostels. Hostel bred children will probably want to stay in the town and find wage jobs, while Herschel Island bred children will probably be happy to return to make a living from the land and the sea. The wealth is there if they know how to use it.

Playgrounds are an important part of a school program, and good playground facilities should be provided.

Electricity

The community should have a power plant capable of handling the domestic and industrial requirements of the people. (There is a lighting plant at the Bar 2 site which might be suitable.)

Drinking Water

Long plastic hose lines will be necessary to pipe waters from the inland lakes to the settlement. In the fall, a reservoir could be filled with fresh water prior to freeze-up and the ice from this can be used during the winter. A pump could bring sea water for cleaning to the industrial complex.

Radio Station

A radio station must be set up to protect the people in times of sickness, accident, and other distress. As long as the R.C.M. Police post remains at Herschel Island, they might be willing to act as the communications center. When the post is closed at Herschel Island, then an alternate system of communication will have to be provided by the Department.

Health Facilities

A health station will be required to provide facilities for visiting medical staff. It should be equipped to handle all ordinary cases of illness or accident.

Other Considerations

Between 15 and 20 pieces of heavy equipment are lined up on the shore at Bar 2 awaiting shipment to the south. Much of this equipment would be useful to the development of Herschel Island and the Yukon coast. It could be used in the construction of roads, docks, air strips, and general community improvements as required. The author recommends careful inspection of this equipment and if it is in satisfactory condition, an effort should be made to keep all useful equipment in the area. The minimum boat requirements have been listed in order to get the project underway. However, constant experimentation is necessary to build up an efficient fleet for Herschel Island. Off shore experimental fishing should be energetically prosecuted as there may be hitherto unexploited resources there, and an especially designed boat may be necessary for work on the Beaufort Sea. Experimental fishing should be done for King crab. The Whale boat is no longer in use on the Yukon coast. This durable, seaworthy, fast, and manoeuverable little craft was a favourite for decades. It was equally good under engine or sail, and it might well be re-introduced as an outside-the-harbour net boat, as well as the boat best suited for use

when capturing the bowhead whale. Continued experiment in design, careful evaluation of the new and old types and an open mind will be needed to continue to improve the Herschel Island fleet. New fishing geat is continually being introduced in the fishing industry. In order to keep up with these developments and ensure that the best use is being made of the resources from Herschel Island, a continual search should be underway for new types of fishing gear and new fishing grounds.

Drag nets, trawls, drift nets, and other types, and if possible, electronic devices for locating fish should be used in conjunction with the better known methods with a view to expanding the fishing grounds and increasing production.

In order to trap the Yukon coast efficiently, it might be advisable to have a line of well-equipped cabins stragetically spaced along the coast. The trappers could operate in all directions from these camps, and with small radios could be in daily communication with Herschel Island. Closer attention to the trap lines would result in increased production and a higher income.

Seasonal Camps

A new settlement at Herschel Island will probably attract people back to the area on their own initiative. Local Eskimos suggested that people from Barter Island to Banks Island would probably come to visit and to trade.

It is possible that some of these people might settle for the summer season at the old camp sites such as King Point, Shingle Point and others.

This could tie in with the Herschel Island project. The fresh fish, whale, seal, and other products of these seasonal camp sites could be brought to Herschel Island by a collecting boat, and processed. Some products such as herring could be salted in barrels and held at the various camp sites till the end of the season and brought to Herschel for processing during the winter, and in time Herschel Island would become the central processing and marketing center for the Yukon coast.

The people who fish these outlying camps may wish to return to their homes for the winter or they may wish to become permanent residents of Herschel Island. It is recommended that Government assistance be available for the people who may come to Herschel Island in this way. At the same time an effort should be made to keep the population at a level consistent with the Yukon coast's resources. When saturation point is reached, the resettlement plan should be repeated in other suitable areas.

SUGGESTED DEVELOPMENT SCHEDULE

As a resettlement area, a satellite community, Herschel Island offers the best site within reasonable travelling distance of Aklavik and Inuvik. It is proposed that the first two seasons should be spent in determining the feasibility of the project. Three main factors are involved:

1. Are marine and other resources there on a continuing basis?

2. Will suitable people from the District live there?

3. Can local markets be developed which will absorb surplus country produce? Furs (white fox) and sealskins will be exported.

The break down of the estimated cost of these seasonal projects will be found in Appendix 1.

After two seasons'experimental harvesting the answers to the above questions should be known. If the outlook is favourable then it is proposed a community should be established on a permenent basis. The initial cost of a permanent community is estimated in Appendix 2.

APPENDIX 1

Estimated Cost of Seasonal Projects

Herschel Island

First Year of a Two Year Project

Food supplies - 10 families 3 months at $500	$5,000	
P.O.L.	2,000	
Canoes and outboard engines	4,700	
Nets and moorings	12,750	
Bowhead whaling equipment	1,000	
Lumber and hardware	3,250	
Meat and bone grinding machine	3,500	
Cannery Supplies and equipment	7,800	
Sealskin flensing machine	4,000	
Purchase of country produce	40,000	$44,000
		40,000
		$84,000

Second Year

Food supplies	$5,000	
P.O.L.	2,000	
Nets and moorings	2,000	
Whaling equipment	500	
Lumber and hardware	2,000	
Cannery supplies	3,500	
Barrels and salt	2,500	
Repairs	2,000	
Purchase of country produce	40,000	
		$59,500

APPENDIX 2

Estimated Cost of a Permanent Community

Housing - 10 - low cost houses at $6,000 Teachers house - $30,000 Projects Officers - $30,000 1 classroom school - $60,000		$180,000	
Industrial Complex - 30 x 60 - wired and insulated 5,400 sq. feet		50,000	
Freezer - 20,000 pounds capacity		25,000	
Co-op store and supplies		50,000	
Powerhouse		50,000	
Health Station		10,000	
Longliner	26,500	33,500	
2 - skiffs	7,000		
Canning Plant		22,000	
Air Strip		10,000	
			$430,500